

Application No. 09/887,144
After final response dated July 9, 2003
Reply to final Office Action mailed April 9, 2003

Attorney Docket No. 026125-076
Page 2 of 4

REMARKS

Claims 17-32 are pending, with claims 17, 29 and 30 being in independent form.

In the final Office Action, claims 17-21, 25, 26, and 30-32 stand rejected for anticipation by U.S. Patent No. 6,275,198 to Kenoun et al. ("Kenoun"). The remaining claims are indicated as either allowed or allowable, which Applicants acknowledge with appreciation. Nevertheless, Applicants believe that all of the pending claims are allowable over Kenoun, because the claims recite features that are absent from the cited document.

For example, claim 17 recites "a radiator having a first end to be connected to radio circuitry in the portable communication apparatus". Claim 18 recites "wherein said radiator is an elongated helical radiator". Thus the radiator portion (e.g., element 30 shown in FIG. 3) of the claimed antenna connected to the portable communication apparatus (e.g., by the first end 31 shown in FIG. 3), as defined by claim 18, is a helical radiator.

In contrast, Kenoun describes an antenna 10 having a wire 50 that has a first end 52 connected to a monopole portion 12 of the antenna 10. Kenoun, col. 3, l. 65 to col. 4, l. 2 and FIG. 3. The monopole portion 12 secures the wire 50 to a cellular communication device, such as a mobile phone. Id. at col. 2, ll. 44-46 and FIG. 4. The wire 50 consists of three segments. A first segment 56 begins at the first end 52 of the wire 50, connected to the cellular communication device. Id. at col. 4 ll. 5-6. The length of the first segment 56 determines the modes of resonance of the antenna 10, and thus is a radiator of electromagnetic energy. See id. at col. 4, ll. 31-34. FIG. 3 of the cited document clearly shows that the first segment 56 is arranged in a straight line. Kenoun describes that a third segment 62 of the antenna 10 includes a helical portion 66, but the helical portion 66 is arranged between a second segment 58 of the antenna 10 and an open end 54 of the wire 50. Id. at col. 4, ll. 9-12 and FIG. 3. Thus, the helical portion 66 is not connected to the cellular communication device as claim 18 requires.

Accordingly, the rejection of claim 18 for anticipation must be withdrawn, as Kenoun fails to describe the claimed feature of a radiator having a first end to be connected to radio circuitry in the portable communication apparatus, wherein said radiator is an elongated helical radiator. Anticipation requires that every feature of the claimed invention be shown in a single prior document. In re Paulsen, 30 F.3d 1475 (Fed. Cir. 1994); In re Robertson, 169 F.3d 743 (Fed. Cir. 1999).

Application No. 09/887,144
After final response dated July 9, 2003
Reply to final Office Action mailed April 9, 2003

Attorney Docket No. 026125-076
Page 3 of 4

With respect to claims 17 and 30, the final Action asserts that the elements claimed are all shown in Kenoun. In support of the assertion, the Action states that the patentee does not have to use the same terms as Applicants for the cited patent to anticipate the claimed invention—it is the structure shown in the cited patent that is determinative. While, in general, the Action's statement is true, it is inapplicable here, where Applicants' recitation of the claim term "feedback conductor" would be understood by those skilled in the art to represent structure substantially different than what is described in the cited document.

It is understood in the art of antenna design that it is not merely the portions of an antenna that determine its radiating characteristics, but also the arrangement of those portions in relation to one another that defines the antenna's operation. For example, the characteristics of a particular antenna portion, such as its physical design (e.g., helical, straight, or curved) or the distance the portion is spaced from other portions of the antenna, determine whether the portion generates energy that is constructive (or mutually couples) with other portions of the antenna, and thus contributes to the radiated energy, or operates in some other manner with the other portions of the antenna to affect the radiated pattern (e.g., tuning).

Claims 17 and 30 define both a radiator portion of the claimed antenna (e.g., element 30 shown in FIG. 3) and a feedback conductor portion (e.g., element 33 shown in FIG. 3) for tuning the antenna. From the above, those skilled in the art would understand that the term "feedback conductor" not only describes a functional mode of the recited element, as the final Action asserts, but also inherently defines characteristics of the recited portion (e.g., the physical design of the "feedback conductor" and the distance the conductor is spaced from the radiator portion) that distinguish it from the cited portion 58 of Kenoun.

For example, Applicants describe on page 6 of the application, lines 5-12, that the substantially different design between the radiator portion (e.g., a helical design) and the feedback conductor portion (e.g., a straight-line design) cause the coupling between the portions to be relatively low. Moreover, Applicants describe that the feedback conductor portion is used to tune and provide impedance matching for the claimed antenna. See, e.g., p. 2, ll. 30-32.

In contrast, Kenoun describes that "the lengths of the first and second segments 56, 58 and the first distance 60, which separates the first and second segments 56, 58, can be varied to determine the modes of resonance. Kenoun, col. 4, ll. 31-34 (emphasis

Application No. 09/887,144
After final response dated July 9, 2003
Reply to final Office Action mailed April 9, 2003

Attorney Docket No. 026125-076
Page 4 of 4

added). In addition, Kenoun describes that the first segment 56 and second segment 58 are both straight-line conductors, arranged so as to be mutually coupled to one another. Moreover, Kenoun describes that "the helical portion 66 of the third segment 62 surrounds the first and second segments 56, 58, so that the wire 50 is self-coupled to the first and second segments 56, 58 through the dielectric constant of the core 32.

Accordingly, the first and second segments 56, 58 are both radiator portions that contribute the resonance frequencies radiated by the antenna 10. Kenoun's description makes this clear. The fact that the second segment 58 physically extends alongside the first segment 56, similar to the arrangement described by Applicants, does not transform the second segment 58 into a "feedback conductor" as defined in claims 17 and 30.

Because Kenoun does not describe a "feedback conductor" as defined in claims 17 and 30, these claims are believed to be allowable over the cited document. Moreover, the remaining rejected claims in the application, which depend ultimately from one of these claims, are considered to be allowable for at least these same reasons.

For the foregoing reasons, Applicants believe the application is in condition for allowance, and respectfully request a Notice to this effect be provided at an early date. If any questions remain, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

By: 

Stephen J. Tyran
Registration No. 45,846

P.O. Box 1404
Alexandria, Virginia 22313-1404
(919) 941-9240

Date: July 9, 2003

FAX RECEIVED

JUL 09 2003

TECHNOLOGY CENTER 2800

I hereby certify that this correspondence is being sent by facsimile transmission to the Commissioner of Patents, P.O. Box 1450 Alexandria, VA 22313-1450 to the following facsimile number:
Facsimile Number: 703 872 9319
Date of Transmission: July 9, 2003


Stephen J. Tyran